

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (original) An electrochemical device component, comprising:
an active metal electrode having a first surface and a second surface;
a protective composite separator on the first surface of the electrode, the composite comprising,
a first material layer in contact with the electrode, the first material being ionically conductive and chemically compatible with the active metal, wherein the first material comprises a material selected from the group consisting of a composite reaction product of the active metal with a metal nitride, a composite reaction product of the active metal with silicon nitride, a composite reaction product of the active metal with a metal halide, a composite reaction product of the active metal with a metal phosphide, a reaction product of the active metal with red phosphorus, and a reaction product of the active metal with LiPON coated with a wetting layer; and
a second material layer in contact with the first layer, the second material being substantially impervious, ionically conductive, reactive to the active metal and chemically compatible with the first material;
wherein the ionic conductivity of the composite is at least 10^{-7} S/cm.
2. (original) The component of claim 1, further comprising a current collector on the second surface of the active metal electrode.
3. (currently amended) The component of claim 1, wherein the second material is comprised in an ~~comprises the sole~~ electrolyte in a ~~subsequently formed~~ battery cell.
4. (currently amended) The component of claim 3, wherein the second material is the sole electrolyte in the ~~subsequently formed~~ battery cell ~~further comprises an electrolyte.~~
5. (original) The component of claim 1, wherein the ionic conductivity of the second material layer is at least 10^{-7} S/cm
6. (original) The component of claim 1, wherein the ionic conductivity of the second material layer is between about 10^{-6} S/cm and 10^{-3} S/cm.

7. (original) The component of claim 1, wherein the ionic conductivity of the second material layer is about 10^{-3} S/cm.
8. (original) The component of claim 1, wherein the thickness of the first material layer is about 0.1 to 5 microns.
9. (original) The component of claim 1, wherein the thickness of the first material layer is about 0.2 to 1 micron.
10. (original) The component of claim 1, wherein the thickness of the first material layer is about 0.25 micron.
11. (original) The component of claim 1, wherein the thickness of the second material layer is about 0.1 to 1000 microns.
12. (currently amended) The component of claim 1, wherein the ionic conductivity of the second material layer is at least ~~about~~ 10^{-7} S/cm and the thickness of the second material layer is about 0.25 to 1 micron.
13. (original) The component of claim 1, wherein the ionic conductivity of the second material layer is between about 10^{-4} about 10^{-3} S/cm and the thickness of the second material layer is about 10 to 500 microns.
14. (original) The component of claim 13, wherein the thickness of the second material layer is about 10 to 100 microns.
15. (original) The component of claim 1, wherein the active metal of the electrode is selected from the group consisting of alkali metals, alkaline earth metals, and transition metals.
16. (original) The component of claim 1, wherein the active metal of the electrode is an alkali metal.
17. (original) The component of claim 1, wherein the active metal of the electrode is lithium or a lithium alloy.
18. (currently amended) The component of claim 17 ~~claim 1~~, wherein the first material comprises a material selected from the group consisting of a composite reaction product of Li ~~active metal~~ with a metal nitride ~~C_3N_4 , active metal nitrides, active metal phosphides, and active metal halides, and active metal phosphorus oxynitride glass.~~
19. (currently amended) The component of claim 18 ~~claim 1~~, wherein the metal nitride is selected from the group consisting of copper nitride, tin nitride, zinc nitride, iron nitride, cobalt

nitride and aluminum nitride ~~first material comprises a material selected from the group consisting of a composite reaction product of Li with C_3N , Li_3N , Li_3P and LiI , $LiBr$, $LiCl$, LiF , and $LiPON$.~~

20. (currently amended) The component of claim 1, wherein the second layer comprises a material selected from the group consisting of phosphorus-based glass, oxide-based glass, sulfur-based glass ~~sulphur-based glass~~, oxide/sulfide based glass, selenide based glass, gallium based glass, germanium based glass, glass-ceramic active metal ion conductors, sodium beta-alumina and lithium beta-alumina.

21. (withdrawn) The component of claim 1, wherein the second layer comprises a material selected from the group consisting of $LiPON$, Li_3PO_4 , Li_2S , SiS_2 , Li_2S , GeS_2 , Ga_2S_3 , $LISICON$, $NASICON$, sodium and lithium beta-alumina.

22. (withdrawn) The component of claim 1, wherein the first layer material comprises a complex of an active metal halide and a polymer.

23. (withdrawn) The component of claim 23, wherein the polymer is selected from the group consisting of poly(2-vinylpyridine), polyethylene and tetraalkylammonium.

24. (withdrawn) The component of claim 23, wherein the complex is LiI -poly(2-vinylpyridine).

25. (currently amended) The component claim 1, wherein the first layer comprises a composite reaction product of Li with Cu_3N ~~C_3N~~ .

26. (withdrawn) The component claim 1, wherein the first layer comprises Li_3P .

27. (withdrawn) The component claim 1, wherein the first layer comprises $LiPON$.

28. (original) The component of claim 1, wherein the second layer is an ion conductive glass-ceramic having the following composition:

Composition	mol %
P_2O_5	26-55%
SiO_2	0-15%
$GeO_2 + TiO_2$	25-50%
in which GeO_2	0--50%

TiO ₂	0--50%
ZrO ₂	0-10%
M ₂ O ₃	0 < 10%
Al ₂ O ₃	0-15%
Ga ₂ O ₃	0-15%
Li ₂ O	3-25%

and containing a predominant crystalline phase composed of $\text{Li}_{1+x}(\text{M}, \text{Al}, \text{Ga})_x(\text{Ge}_{1-y}\text{Ti}_y)_{2-x}(\text{PO}_4)_3$ where $X \leq 0.8$ and $0 \leq Y \leq 1.0$, and where M is an element selected from the group consisting of Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm and Yb and/or and $\text{Li}_{1+x+y}\text{Q}_x\text{Ti}_{2-x}\text{Si}_y\text{P}_{3-y}\text{O}_{12}$ where $0 < X \leq 0.4$ and $0 < Y \leq 0.6$, and where Q is Al or Ga.

29. (withdrawn) The component claim 28, wherein the first layer comprises Li₃P.
30. (currently amended) The component claim 28, wherein the first layer comprises a composite reaction product of Li with Cu_3N ~~Cu_3N~~ .
31. (withdrawn) The component claim 28, wherein the first layer comprises LiI· poly-2-vinylpyridine.
32. (withdrawn) The component claim 28, wherein the first layer comprises LiPON.
33. (withdrawn) The component of claim 1, wherein the second layer is a flexible membrane comprising particles of an ion conductive glass-ceramic having the following composition:

Composition	mol %
P ₂ O ₅	26-55%
SiO ₂	0-15%
GeO ₂ + TiO ₂	25-50%
in which GeO ₂	0--50%
TiO ₂	0--50%
ZrO ₂	0-10%
M ₂ O ₃	0 < 10%

Al ₂ O ₃	0-15%
Ga ₂ O ₃	0-15%
Li ₂ O	3-25%

and containing a predominant crystalline phase composed of $\text{Li}_{1+x}(\text{M}, \text{Al}, \text{Ga})_x(\text{Ge}_{1-y}\text{Ti}_y)_{2-x}(\text{PO}_4)_3$ where $X \leq 0.8$ and $0 \leq Y \leq 1.0$, and where M is an element selected from the group consisting of Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm and Yb and/or and $\text{Li}_{1+x+y}\text{Q}_x\text{Ti}_{2-x}\text{Si}_y\text{P}_{3-y}\text{O}_{12}$ where $0 < X \leq 0.4$ and $0 < Y \leq 0.6$, and where Q is Al or Ga in a solid polymer electrolyte.

34-72. (canceled)

73. (new) The component of claim 18, wherein the metal nitride is copper nitride (Cu_3N).

74. (new) The component of claim 17, wherein the first material comprises a material selected from the group consisting of a composite reaction product of Li with a metal halide.

75. (new) The component of claim 17, wherein the first material comprises a material selected from the group consisting of a composite reaction product of Li with a metal phosphide.

76. (new) The component of claim 17, wherein the first material comprises a material selected from the group consisting of a reaction product of Li with red phosphorus.

77. (new) The component of claim 17, wherein the first material comprises a material selected from the group consisting of a reaction product of Li with LiPON coated with a wetting layer.

78. (new) The component of claim 77, wherein the wetting layer coating is Ag.

79. (new) The component of claim 77, wherein the wetting layer coating is Sn.